

CLAIMS

1. A polymer particle coated with silica comprising: a polymer particle derived from a polymerizable vinyl-based monomer; and a silica film covering the polymer particle, which makes a surface of the polymer particle expose so that an aperture ratio of 0.1 to 1 is possessed and a height h of the silica film and a diameter D of the polymer particle coated with silica have a relationship of $0.5 \leq h/D < 1$, wherein the silica film includes a polyalkoxysiloxane oligomer condensate.

2. A coating composition comprising: a polymer particle coated with silica comprising a polymer particle derived from a polymerizable vinyl-based monomer, and a silica film covering the polymer particle, which makes a surface of the polymer particle expose so that an aperture ratio of 0.1 to 1 is possessed and a height h of the silica film and a diameter D of the polymer particle coated with silica have a relationship of $0.5 \leq h/D < 1$, the silica film including a polyalkoxysiloxane oligomer condensate; and a binder solution, wherein the binder solution contains a binder resin and a solvent.

3. The coating composition according to claim 2, wherein an amount of the polymer particle coated with silica to be blended is 1 to 150 parts by weight per 100 parts by weight of the binder resin.

4. A coated article, wherein the coating composition according

to claim 2 is coated on a substrate.

5. An optical member, wherein the coating composition according to claim 2 is coated on a transparent substrate.

5

6. The optical member according to claim 5, wherein an amount of the polymer particle coated with silica to be blended is 20 to 120 parts by weight per 100 parts by weight of the binder resin.

10 7. A liquid crystal display wherein the optical member according to claim 6 is used.

8. A light diffusible molded article comprising a transparent resin and a polymer particle coated with silica, wherein the polymer
15 particle coated with silica comprises a polymer particle derived from a polymerizable vinyl-based monomer, and a silica film covering the polymer particle, which makes a surface of the polymer particle expose so that an aperture ratio of 0.1 to 1 is possessed and a height h of the silica film and a diameter D of the polymer particle coated with silica
20 have a relationship of $0.5 \leq h/D < 1$, and the silica film includes a polyalkoxysiloxane oligomer condensate.

9. The light diffusible molded article according to claim 8, wherein the polymer particle coated with silica has a difference in a
25 refractive index from that of the transparent resin of 0.01 to 0.10, and

the diffused light transmittance represented by an (equation), diffused light transmittance (%) = total light transmittance (%) × haze (%) × 0.01, has a value of 80% or more.

5 10. The light diffusible molded article according to claim 8, wherein an amount of the polymer particle coated with silica to be blended is 0.1 to 20 parts by weight per 100 parts by weight of the transparent resin.

10 11. A method for producing a polymer particle coated with a silica film which makes a surface of the polymer particle expose so that an aperture ratio of 0.1 to 1 is possessed, and a height h of the silica film and a diameter D of the polymer particle coated with silica have a relationship of $0.5 \leq h/D < 1$, the method comprising, in the following
15 order, the steps of:

 uniformly mixing 100 parts by weight of a polymerizable vinyl-based monomer, 10 to 500 parts by weight of a polyalkoxysiloxane oligomer which is inert to the polymerizable vinyl-based monomer, and 0.01 to 10 parts by weight of a polymerization initiator to obtain a
20 monomer composition;

 aqueous suspension-polymerizing the polymerizable vinyl-based monomer in the monomer composition in the presence of a suspension stabilizer to obtain a polymer particle; and

 adding an acid or base catalyst to condense the
25 polyalkoxysiloxane oligomer.

12. A method for producing the polymer particle coated with silica according to claim 1, wherein the polyalkoxysiloxane oligomer has a weight-average molecular weight of 300 to 3000.